

## Wind Chill Temperatures

When you go outside on a windy day, it usually *feels* much colder than the actual temperature on the thermometer. This happens because the wind causes you to lose more heat from the surface of your skin than you would lose if the air were still. The temperature you feel is called the wind chill temperature. The table below lists some of the wind chill temperatures that have been calculated by the National Weather Service.

Wind Chill Temperatures (degrees Fahrenheit)

Wind Speed (miles per hour)	Actual Temperature								
	20	15	10	5	0	-5	-10	-15	-20
5	16	12	7	0	-5	-10	-15	-21	-26
10	3	-3	-9	-15	-22	-27	-34	-40	-46
15	-5	-11	-18	-25	-31	-38	-45	-51	-58
20	-10	-17	-24	-31	-39	-46	-53	-60	-67
25	-15	-22	-29	-36	-44	-51	-59	-66	-74
30	-18	-25	-33	-41	-49	-56	-64	-71	-79
35	-20	-27	-35	-43	-52	-58	-67	-74	-82
40	-21	-29	-37	-45	-53	-60	-69	-76	-84
45	-22	-30	-38	-46	-54	-62	-70	-78	-85
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Use the table above to answer each question.

- If the wind speed is 10 miles per hour and the actual temperature is  $0^{\circ}\text{F}$ , what is the wind chill temperature?
- Suppose that the actual temperature is  $-5^{\circ}\text{F}$  and the wind speed is 15 miles per hour. How much colder than  $-5^{\circ}\text{F}$  does it feel?

Describe the change in the wind chill temperature.

- The wind speed remains constant at 10 miles per hour, but the actual temperature rises from  $-5^{\circ}$  to  $20^{\circ}\text{F}$ .
- The actual temperature remains constant at  $-10^{\circ}\text{F}$ , but the wind speed increases from 5 miles per hour to 35 miles per hour.

Estimate the wind chill temperature in each situation.

- The actual temperature is  $8^{\circ}\text{F}$  and the wind speed is 22 miles per hour.
- The actual temperature is  $-10^{\circ}\text{F}$  and the wind speed is 55 miles per hour.